

LSI.94US01 (03-2049)

REMARKS

Claims 1-18 are currently pending in the above-identified patent application. Claims 1 and 12 have been amended. No new matter has been added by these changes, since support for the amendment of "characteristic" to "identifying characteristic" may be located on page 4, lines 18-23, of the subject Specification, as originally filed. Therein, it is stated that: "Briefly, the present invention includes an apparatus and method for enabling a circuit board or data storage module, as examples, located within a slot or bin in an enclosure to determine the identification of the slot by detecting a characteristic feature of the slot. In this manner the circuit board or data storage module can operate in accordance with the function of that slot. This is particularly important when a plurality of slots or enclosure locations contain identical modules having different functions." emphasis added by applicants. Support for the limitation: "disposed on said circuit board" added to claim 1 may be found beginning on page 4, line 29, to page 5, line 3.

In the Office Action dated May 04, 2006, the Examiner rejected claims 1-10 and 12-17 under 35 U.S.C. 102(b) as being anticipated by Ninomiya (U.S. Patent No. 5,809,330), since the Examiner stated that as per claims 1 and 12, Ninomiya teaches an apparatus for determining the function of a circuit board (expansion unit, element 2, Fig. 1) disposed in a slot (detection via connectors, element 26 and 27, Fig. 1) in an enclosure and in electrical communication with said enclosure (laptop-type environment, Fig. 1), which comprises in combination: (a) means located within said enclosure for displaying a characteristic of the slot (expansion connector detecting various possible characteristics in the form of multitude of expansion devices, Col. 7, lines 53-58); (b) means disposed on said circuit board for detecting the characteristic (upon connection routed to system bus for characteristics further determined by photo-sensors, Col. 7, lines 66-67, and Col. 8, lines 1 -10); and (c) a processor for interpreting the detected characteristic and for directing said circuit board to perform the function associated therewith (CPU enables connectors and determining of characteristics between expansion unit and main unit, element 11, Fig. 1).

The Examiner continued that:

LSI.94US01 (03-2049)

as per claims 2 and 13, Ninomiya teaches the apparatus wherein said means located within said enclosure for displaying a characteristic of the slot comprises means for generating at least one signal, and at least one tab disposed within the interior of the slot capable of substantially reducing the at least one signal (light from photo emitter to photoreceptor is considered at least one signal generated, Col. 8, lines 7-10);

as per claims 3 and 14, Ninomiya teaches an apparatus wherein said means disposed on said circuit board for detecting the characteristic of the slot comprises means for detecting the at least one signal (photo sensors, elements 30-31, Fig. 1);

as per claims 4 and 15, Ninomiya teaches an apparatus wherein said means for generating at least one signal comprises a source of light (photo emitter, Col. 8, lines 7-10), and wherein said means for detecting the characteristic of the slot comprises at least one light detector (photo-sensor, element 30, Fig. 1) adapted for detecting light generated from said source of light;

as per claim 5, Ninomiya teaches an apparatus wherein said at least one tab is disposed in a pattern characteristic of the slot, and said at least one light detector, reproduces the pattern characteristic of the slot (indication of the option card generated based on signal DTE2, Col. 8, lines 21-27);

as per claim 6, Ninomiya teaches an apparatus wherein the light generated from said source of light is substantially reduced by said at least one tab when said at least one tab is disposed between said source of light and said at least one light detector (passage of light block upon insertion of option card substantially reducing the light generated from the source in reference to the opposing photo-sensor, Col. 8, lines 21-24);

as per claims 8 and 16, Ninomiya teaches an apparatus wherein said means displaying a characteristic of the slot comprises at least one source of light; and said means for detecting the characteristic of said slot comprises at least one light detector adapted for detecting light generated by said at least one source of light, whereby the pattern characteristic of the slot is reproduced by said at least one light detector; and

as per claims 10 and 17 an apparatus wherein said means for detecting the characteristic of the slot comprises at least one microswitch (microswitch, Col. 8, lines

LSI.94US01 (03-2049)

33-35 in electrical communication with said processor, and said means for displaying a characteristic of the slot comprises at least one projection positioned on a wall of said enclosure disposed in a pattern characteristic of the slot and adapted to actuate one of said at least one microswitch when said circuit board is inserted into the slot, such that the characteristic of the slot is sensed by said at least one microswitch (mechanically detected by means of microswitch through detection of a change in voltage to certain pins of the expansion connector, col. 8, lines 27-35).

Applicants respectfully disagree with the Examiner concerning the rejection of claims 1-10 and 12-17 under 35 U.S.C. 102(b) as being anticipated by Ninomiya (U.S. Patent No. 5,809,330), for the reasons to be set forth hereinbelow.

Claims 11 and 18 were rejected under 35 U.S. C. 103(a) as being unpatentable over Ninomiya in view of Pope et al. (U.S. Patent No. 4,781,066), since the Examiner asserted that as per claims 11 and 18, Ninomiya fails to teach and apparatus wherein said means disposed on said circuit board for detecting the characteristic of the slot comprises a Hall-effect apparatus, but that Pope et al. analogously teaches an apparatus wherein said means disposed on said circuit board for detecting the characteristic of the slot comprises a Hall-effect apparatus (element 75, Fig. 6, lines 36-40). The Examiner then concluded that it would have been obvious to one of ordinary skill in the art at the time of the applicants' invention to modify Ninomiya with the above teaches of Pope et al., since one of ordinary skill would have been motivated to make such modification in order to have a detection system that permits enhanced sensitivity and noise immunity in the system (Col. 7, lines 7-10).

Applicants respectfully disagree with the Examiner concerning the rejection of claims 11 and 18 under 35 U.S. C. 103(a) as being unpatentable over Ninomiya in view of Pope et al. (U.S. Patent No. 4,781,066), for the reasons to be set forth hereinbelow.

Turning now to the rejection of claims 1-10 and 12-17 under 35 U.S.C. 102(b) as being anticipated by Ninomiya (U.S. Patent No. 5,809,330), applicants wish to point out that Ninomiya in Col. 7, lines 46-48, it is stated that: "The expansion unit 2 contains a connector 27, expansion slots including expansion connectors 28 and 29, as well as photosensors 30 and 31 to determine the presence of a card." (Emphasis added by

LSI.94US01 (03-2049)

applicants). Additionally, Col. 8, lines 4-19, state: "The photosensor 30 is a card detection device that detects whether option card 32 is connected to the expansion connector 28, and is located in the card insertion path of the expansion slot. As shown in the drawing, the photosensor 30 has two protrusions, one side of which is equipped with a photoemitter and the other side of which, facing the first, is equipped with a photoreceptor. When an option card 32 is connected to the expansion connector 28, the passage of light in the space between these two protrusions, that is, the space between the photoemitter and the photoreceptor, is obstructed by the insertion of the option card 32. In this event, the photosensor 30 generates a card detection signal DTE1 indicating that the option card 32 was inserted in the expansion slot. (Emphasis added by applicants). The card detection signal DET1 is sent to the system controller 12 via the connectors 27 and 26, and a flag indicating the insertion of a card is thereupon set in a prescribed status register in the system controller 12."

Clearly, Ninomiya only teaches a card detection device that detects whether a card is connected to the expansion connector and is located in the card insertion path of the expansion slot. There is no teaching of apparatus for determining the function of a circuit board disposed in a slot in an enclosure, as is recited in both of subject claims 1 and 12, as amended herein. Therefore, applicants respectfully believe that Ninomiya neither anticipates the subject claimed invention, nor does a combination of Ninomiya with Pope et al. render the subject claimed invention obvious.

In view of the discussion presented hereinabove, applicants believe that subject claims 1-18, as amended, are in condition for allowance, and such action by the Examiner at an early date is earnestly solicited.

LSI.94US01 (03-2049)

Reexamination and reconsideration are respectfully requested.

Respectfully submitted,

COCHRAN FREUND & YOUNG LLC

Date: August 04, 2006

By:


Samuel M. Freund

Reg. No. 30,459

2026 Caribou Drive, Suite 201

Fort Collins, Colorado 80525

Phone: (970) 492-1100

Fax: (970) 492-1101

Customer No.: 27479